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ABSTRACT

The study reported in this paper describes business/industry involvement with the education of secondary school students in Britain, the Federal Republic of Germany, and France. The study covers the following: business/industry's criticisms and recommendations about secondary education; the institutional framework within which business/industry involvement with education takes place; the characteristic collaborative arrangements in each of the three countries; the directions and forms of business/industry involvement with education across the three countries; and the conditions influencing such involvement. Some of the findings of the study, drawn from onsite inquiry and documentary sources, are as follows: (1) employers in all three nations make similar criticisms of the schools, including lack of connection of school curricula with the world of work, the schools' preoccupation with academic study and credentials, inadequacy of basic skill training, and the consequent unpreparedness of school leavers for work; (2) their recommendations for change are also very similar--a more practical curriculum, greater appreciation of the world of work, and more efficient management of schools; (3) business/industry participation is organized in substantially different ways in each of the three countries--France's job education is the most school-based, Germany's is the most firm-based, while England has a mixed model; and (4) business/industry continues to have an important if not dominant role in vocational training. There is no indication that any method of financing, whether public or business/industry, affects the involvement of business/industry in vocational education. (Author/KC)

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VOCATIONALISING EDUCATION CONFERENCE

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INTERNATIONAL STUDY OF BUSINESS/INDUSTRY INVOLVEMENT WITH EDUCATION

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Queens College, City University of New York

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2. Business/Industry Recommendations.

Business/industry involvement with education goes far beyond voicing complaints, and extends to making both general and specific recommendations for change. In spite of significant differences among the three countries in educational goals, structures, and processes, there is remarkable similarity of view expressed by employers and their organizations in Britain, France, and Germany, regarding what needs to be done in the realm of secondary education.

Business people wish to see the distance between the world of work and the world of the schools sharply diminished, and to that end they propose changes in school curriculum, in teacher training and in-service education, and in the management and structure of the school system.

Curriculum.

As noted in many citations above, a major charge made against the secondary school curriculum is that it has been too academic, and is biassed against the child with practical talents. British, French, and German employers are united in their specification of the qualitites they desire to see in the young people they hire:

> The qualities which employers want in school leavers are qualities which are equally valuable to those looking for work, the self employed or those training or re-training. They are: the ability to learn; the ability to get on well with other people; the ability to communicate; reliability; basic literacy and numeracy; and an understanding of how the community's wealth is created. (Association of British Chambers of Commerce 1984, Recommendation 16)

In the hope of promoting the acquisition of such skills, business/industry recommends that it be afforded a much greater opportunity than at present to influence the content, pacing, and balance of the curriculum. It argues that its influence should be used to insure that preparation for work be made an organic element of the secondary school curriculum, and not just a mere "add-on" subject (Association of British Chambers of Commerce 1984, Recommendation 8). German industry in particular recommends that the upper grades of the secondary schools move away from their single-minded concentration on preparing young people for university entrance and that throughout the school system the emphasis on academic material be tempered by giving more attention to music, art, and sport. Representatives of Imperial Chemical Industries in Britain have observed:

> Generalized comments about school curriculum are apt to be dangerous, but it does appear that continual effort should be made to relate more of classroom learning to the practical world that confronts the school leaver. (Imperial Chemical Industries 1983, 217)

And French employers say,

INTERNATIONAL STUDY OF

BUSINESS/INDUSTRY INVOLVEMENT

WITH EDUCATION

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March 1986.

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INTERNATIONAL STUDY OF BUSINESS/INDUSTRY INVOLVEMENT WITH EDUCATION

Harold J. Noah and Max A. Eckstein

ABSTRACT

The study is intended to expand knowledge of business/industry involvement with the education of young people of secondary school age in Britain, the Federal Republic of Germany, and France.

The study has five main aspects:

- o documentation of business/industry's criticisms and recommendations concerning secondary education;
- o description of the institutional framework within which business/industry involvement with education takes place;
- o description of characteristic collaborative arrangements in each of the three countries;
- o comparison across the three countries of the directions and forms of business/industry involvement with education;
- o identification of the conditions influencing such involvement.

Data for the study have been acquired by on-site inquiry, and from documentary sources.

Major findings are as follows:

o Employers in all three nations make similar criticisms of the schools. These include: lack of connection of school curricula with the world of work, the schools' preoccupation with academic study and credentials, inadequacy of basic skill training, and the consequent unpreparedness of school leavers for work.

o Their recommendations for change, aimed at repairing these deficiencies, are also very similar. They want a more "practical" curriculum, greater knowledge and appreciation of the world of work on the part of both teachers and students, and more efficient management of the schools.

o Business/industry participation is organized in substantially different ways in each of the three countries, though specific types of activities tend to be repeated.

o. The three nations represent three different models of transition education and training: school-based (France), firm-based (Germany), and a mixed model (England).

o There is considerable variation in the extent to which business/industry is involved in secondary transition education, from extensive (in Germany) to relatively low (France).

o In Germany, there has been little change over the last few years in either the extent or the structure of business/industry involvement in education and training. This is in sharp contrast to both France and Britain (the latter, particularly), where the trend of government policies has made remarkable shifts. These shifts have, in turn, produced substantial tension between the traditional authorities governing education and the newly created ones.

o In Germany, employers bear a large proportion of the costs of training, recouping much of this by utilizing the relatively cheap labor of apprentices; in Britain, the wage costs of trainees are rather high for employers, and government tries to reduce these by offering employment and training subsidies. In France, too, the combination of a secondary school-based vocational and technical training and a payroll training tax implies that a large fraction of total education and training costs are covered either directly or indirectly by public funds.

o There is no evidence from these three cases that any particular mode of financing (by State, employer, or trainee) or administration (local or central) is to be preferred as a way of involving business/industry, though presumably the greater the reliance on public funding, the greater the risk that changes in government budget priorities will adversely affect business/industry involvement in the future.

o Business/industry continues to have an important if not dominant role in vocational training. In spite of the sizeable increase in business/industry interest in secondary education, the base from which it began was extremely small, and its involvement, therefore, remains limited and sporadic, especially as regards the general education system.

o If business/industry involvement in general education is to be successful, and even expand, careful attention has to be given to establishing the conditions and appropriate institutional arrangements for collaboration between business/industry and the schools. Some progress toward this in France and Britain is noted; in Germany the dual system has for long provided these conditions for vocational and technical training, though relatively little has been done to expand collaboration with respect to general education.

A final section of the study, not included in the present version, assesses the implications of the above findings for U.S. policy and practice.

An extension of the study is projected to focus on business/industry involvement in post-secondary and, specifically, higher education in these three countries, and Japan.

I. INTRODUCTION

This study investigates the involvement of business and industry with the education and training of young people aged 14-18 (middle and upper secondary level) in three industrialized countries: Britain, the Federal Republic of Germany, and France. The principal aim is to compare and contrast these countries' experience, practices, and policies, in order to expand knowledge of these developments among members of the business and educational communities in the United States. As a preface to the discussion of the project's purpose, we describe the scope of the project in terms of: the three countries, related U.S. projects, changing involvement of business and industry, employers' concerns about schools, employers' involvement in education/training, and the specific goals of the study.

o The Three Countries

We have selected these nations for study because they combine similarities and variations. They are sufficiently similar to one another and to the United States to support valid comparisons, while they simultaneously vary importantly in the areas to be studied. The features that they share with each other and with the United States are: a representative political system which encourages initiatives from non-governmental interest groups; a mixed free-market economy in which private ownership predominates, but where public policy plays an influential ground-setting role; a highly developed, technologically advanced economic system; a public education system that provides universal tuition-free access to schooling through at least age 18; and widespread, strongly supported opportunity for continuing and higher education beyond that age.

However, along with these commonalities, these nations represent a considerable range of practices intended to meet broadly similar aims of preparing young people for employment and citizenship. France has a highly centralized system of educational administration, management, and finance; German education is organized on a decentralized basis at the national level, but is highly centralized within each Land; the English system is decentralized to the local level, but with the central government retaining considerable general authority. The nations have had different economic experiences in the last few years, England having had the most economic difficulty, Germany the least. And, as we will point out later in greater detail, the countries have had quite different approaches to preparing young people for the transition from school to work. Quite substantial differences may be seen in the degree and pattern of business/industry involvement with the schools.

o Changing Involvement of Business/Industry

Before the mid-1800's in the now industrialized nations, the preparation of young people for their working lives took place mostly in the workplace. But this is no longer true. Over a period of some 100 years, secondary and post-secondary schooling has assumed ever greater responsibility for preparing young people for working life. However, this vast expansion of public education in most industrialized nations appears now to have reached something of a plateau. In the United States, the private sector is expressing increasing concern at how the schools prepare (or fail to prepare) young people for employment, and schools are opening themselves to many new ways to fulfill this task. In particular, active partnerships are developing in different forms across the country.

The study is concerned with the two broad categories of business/industry involvement in education and training: what employers and their associations say about the schools; and how they actually participate in education and training.

o Employers' Concerns About Schools

Employers complaints about the deficiencies of formal schooling are long-standing and widespread. They charge that the schools are ineffective in teaching a basic set of skills and attitudes. Specifically, they charge that the schools teach an inadequate curriculum, that they leave students ignorant of the real merits of business/industry (and even promote hostility to business/industry enterprise), that the credentialling system used in education is confused, confusing, and unhelpful in the hiring process, and that the schools are run inefficiently.

Hoping to improve matters, employers and their organizations in all three countries are making a similar set of proposals for change. They want the schools to pay much more attention to the practical applications of knowledge, to tone down their preoccupation with preparation for entry into higher education, and to be more responsive to employers' priorities for entry-level workers. In pursuit of these objectives, employers urge that specific job training be done under their supervision, and not by the schools. They ask that the quality of teachers be improved; in particular, they advocate much greater exposure of teachers and students to business and industry, so that young people do not learn false notions about the world of work. They ask that the schools adopt business/industry's concern for the efficient and productive use of scarce resources.

o Employers' Involvement in Education/Training

Though the criticisms and proposals for change tend to be quite similar across countries, the nature and extent of employer involvement in education/training vary greatly. This is partly the result of precedents, and partly the result of current conditions and institutional arrangements.

In Germany, for example, starting before World War I, great emphasis

has been placed on the systematic education, training, and credentialling of young people for entry into work. A system has been developed (the so-called 'dual system') in which educational authorities, employers, and trade unions cooperate to provide opportunities for young people to enter apprenticeships while continuing their general education on a release-time basis. This has flourished in spite of the fact that employers cannot count on public funds to defray their job-related training efforts.

In France, a quite different model has been adopted. Notions of education-industry partnerships are quite new, and young people receive most of their job-related training in vocationally-oriented secondary level institutions financed by the government. Nevertheless, as in Germany, it is accepted as a national responsibility that young people be provided with the opportunity to acquire a vocational, entry-level qualification.

The British, in contrast, have been reluctant until most recently to assert a national youth training policy, whether executed in the schools, or shared between schools and employers. Credentialling for job entry has been largely left to the uncoordinated initiatives of employers and their organizations, while the schools have been charged with the responsibility for academic credentialling. However, the contemporary British scene is marked by a notable change in government attitude, accompanied by many central government initiatives to encourage development of a mixture of the French model of school-based job preparation and the German model of partnership between the schools and employers.

o Principal Questions to be Answered

o What is the nature and extent of current business criticism of the secondary and post-secondary educational system?

o What are the specific changes in educational organization and curriculum being proposed by business?

o To what extent and in what specific ways is business currently cooperating with educational institutions in the education and training of young people?

o What are the pressures on business/industry to become involved in educational processes both within and across nations? Are there characteristics common to employers across nations (e.g., size, economic sector, experience of economic expansion or decline) associated with aspects of their involvement in education/training? If so, what characteristics are associated with what aspects?

o How, across nations, have business/industry revised their involvement in education/training in response to : (i) the downturn in economic activity since 1980; (ii) the upturn since 1983/4; (iii) the marked increases in the numbers of young people leaving the education sector and seeking employment?

o What factors influence the extension of business-education partnerships?

o What is the potential of, and what are the limits to, business/industry collaboration with education?

o Sources

The major types of sources used in the study are:

Official government documents from each country and from agencies of the European Community;

Business/industry organization documents: annual reports, position papers, project reports, testimony at public hearings;

Research studies;

Newspaper, magazine, and journal literature;

Personal communications from individual scholars, practitioners, and officials;

Interviews.

(See References listing for titles of printed and mimeo. sources).

II. CRITICISMS AND RECOMMENDATIONS

Two major aspects of business/industry involvement in education and training are: the criticisms employers and their associations voice concerning the schools, and the recommendations they make for improving education and training.

1. Business/Industry Criticisms.

Employers have been complaining about deficiencies of formal schooling ever since the establishmen' of national systems of education. Their criticisms of the schools continue unabated, and are directed at both the schools' curricula and at their organization and management practices.

Curriculum.

With respect to the curriculum, in Britain, France, and Germany, as in the United States, the most frequent criticism voiced is that schools provide an inadequate and inappropriate preparation for entry into work. Thus, a memorandum submitted by the British Manpower Services Commission to a House of Commons committee observed:

> There are a number of common specific points raised by employers in criticism of school curricula. A frequently heard concern is that the standard of school leavers' literacy and numeracy is well below what it should be. When pressed to be more specific about standards of literacy, employers point to illegible writing, limitations of vocabulary, weakness of grammar and syntax and poor presentation. Lack of facility in mathematical skills means that many school leavers are unable to cope with craft training without remedial education and this gives widespread cause for concern. (Great Britain. House of Commons 1983, 361, para.3.9)

The Association of British Chambers of Commerce has also complained that employers remain unconvinced that the schools are equipping their leavers with the sort of numeracy needed in the workplace. They fault the schools for giving too little attention to equipping students for group work and deplore "the stranglehold which academic selection for universities has on the schools' ability to provide either a broadly-based, relevant or practical education for high attainers." (Association of British Chambers of Commerce 1984, paras.15,16)

Similarly, in France:

> Employers do not mince their words when criticising the training of young workers and employees, especially those graduating from the Lycées d'Enseignement Professionel (LEPs):

> absence of necessary workskills; lack of practical training; ignorance of working conditions, limits, and norms characteristic of the enterprise. (Cane and Coutty May 1982, 10)

German employers offer parallel criticisms of their educational system. It is alleged that the recent reforms intended to improve access to middle and upper secondary education have increased the emphasis on general academic schooling to the neglect of preparation for work; and that the needs of employers and the demands of the workplace are ignored and vocational schooling is disparaged. (Goebel 1984, 71)

Citing the results of a survey of British employers, Jamieson and Lightfoot report:

> . . . the vast majority [of local industrialists] had particular grievances about the [educational] system which they felt should be redressed. Three of the most common criticisms of the school system were, in rough order of importance: pupil attitudes towards work (including attitudes towards the disciplines of work of any kind as well as specific attitudes towards industry); the maths problem; the literacy and communications problems. (Jamieson and Lightfoot 1982, 105)

It is argued that attempts to improve the school system may have made important things worse. Business interests in Germany claim that reforms in both the organization and content of secondary schooling have led to a deterioration in general education. (Goebel 1984, 34)

The British Chamber of Commerce and Industry makes the following summary criticisms:

> . . . the education system has not hitherto proved flexible enough in adapting to the changing needs of the community which it serves . . . There is too much choice in the curriculum of most secondary schools. (Association of British Chambers of Commerce 1984)

In apparent paradox, employers fault the schools for being too academic while at the same time failing to equip young people with adequate basic educational skills. In addition, it is alleged, students lack the skills of cooperation and communication needed for successful work in a business environment. Making a more ideological point, British employers especially have complained that schools do not inculcate in school leavers positive attitudes toward business/industry, but instead even promote negative attitudes to authority, entrepreneurial activity, and the fundamental concept of a market-driven, profit-oriented economic system. (Confederation of British Industry 1984)

A French employers' group (the Chambres de Commerce et d'Industrie)

complains of the "excessive segregation between the world of the schools and the outside world." (Mission Education-Entreprises 1985, 2)

In a memorandum submitted by the Confederation of British Industries to a House of Commons Education, Science, and Arts Subcommittee in 1981, similar views were expressed:

> Employers therefore strongly support the case for vocational elements within the school curriculum particularly in the later years of compulsory education. By this we do not mean specific vocational courses as an entry into particular trades or occupations, but a general vocational approach leading to an orientation across the whole of school life which encourages the development of attitudes, skills and knowledge of relevance to adult society . . .
>
> We believe that young people should leave school with an adequate understanding of how wealth is created in our society and an appropriate evaluation of the essential role of industry and commerce. (Confederation of British Industry 1981, 117)

Part of the problem, observes Otto Esser, President of the Confederation of German Employers, has to do with the way school textbooks portray the economic aspects of society:

> It would not be right to present an idealized version lest cynicism immediately overtake the new entrant into the workforce. But it is equally untrue and irresponsible to show it only as negative and marked by conflict. (Cited in Goebel 1980, 332)

Operation and Governance.

A second set of criticisms refers to employers' concerns about the operation and governance of the educational system. They allege persistent wasteful practices that lead to high costs per unit of "output", for example the proliferation of elective subjects and courses. As far as the external efficiency of the school system is concerned, employers everywhere complain about a lack of response to the changing needs of the workplace. Plans for school reforms completely omit consideration of market mechanisms. (Goebel et al. 1984, 71) Where the schools provide skill-specific training, waste is said to occur because the training tends to be extremely expensive and the skills provided too often do not conform well to those needed in the workplace. French employers' criticisms are pointed. An article in Le Monde de l'Education entitled, "Adapting to the Reality of Work" states:

> Those leaving school are very good at making theoretical points, but they don't have a practical bent," complains an owner of an auto repair shop in Rennes. "Removing a rusted-in

> exhaust pipe is a nasty job, but it's got to be done. Disassembling a gearbox is a nice educational exercise perhaps, but we don't have the time for that kind of thing here. You've got to work fast: labor charges are based on time spent, and the customer is waiting." (Cans and Coutty May 1982, 14)

The secretary of a French local chamber of commerce dismisses the schools out-of-hand:

> "I'm not interested in what the schools are doing. They are completely disconnected from employment". (Dominique Ausseil, joint secretary of the Fougères chamber of commerce, quoted in Loc. cit., 15)

Moreover, and notably in Britain, employers state that the credentials gained through schooling are poor predictors of an employee's eventual performance, and that where new credentials have been introduced during recent years they are difficult to understand.

In England, France, and Germany, employers point to what they consider to be excessive red tape and government interference in both school-based and out-of-school vocational training. Efforts to improve education by more planning have resulted in inefficiency and bureaucratization. At the same time, they view the schools as insular, dominated by educational professionals who pay too little regard to the realities of economic life and business men's advice. According to one German industrialist, this is a result of the poor education of teachers who are all too often unable to relate their teaching to practical experience and reality. (Goebel et al. 1984, 31-32)

Employers deplore what they see as their governments' lack of confidence in business/industry's view of the education problems and of business/industry's contributions toward a solution. At the conclusion of their extensive participation in the recent report and recommendations of the Bloch Committee (Mission Education-Entreprises, May 1985), the French Conseil National du Patronat Français (National Council of French Employers) had this to say in commentary on the final report of the Committee:

> Generally, we have felt throughout the work of the Mission that the will to work together foundered on a fundamental misunderstanding on the part of the [Ministry of] National Education, concerning the professional and inter-professional organizations and concerning the enterprises, their role, their mission, and their potential. Thus, in the suggested typology of institutional resources available for analysis and forecasting, it is regrettable that precisely those professional organizations which have the role of defining policies and common needs on behalf of the enterprises were never cited. (Mission Education-Entreprises 1985, 153)

> ...it would be unrealistic in the future to continue to seperate general and vocational education. Mastering the techniques necessary for practising a trade or vocation requires assimilating the scientific knowledge upon which those techniques are based. (Charte des Apprentissages Professionels 1984, 6)

The same organization goes on to make explicit recommendations for a more desirable pedagogy in French schools: young people should have the experience of carrying out their own research projects and of working together in small groups. (Ibid., 23)

In England and Germany especially, business/industry wants the curriculum to be much more flexible over time, able to adapt much more readily than at present to the changing needs of the economy. The key to greater flexibility, they suggest, is to adopt in education the market principles guiding the business world:

> Curriculum policy should be customer oriented instead of producer oriented. It should begin with an audit of the skill requirements which people need in their normal daily life, including their working life, followed by the matching of these requirements against what the schools are providing. (Association of British Chambers of Commerce 1984, Recommendation 5)

Parallel to its recommendations with regard to teachers and their training, business/industry wants a good deal more knowledge of economic and business affairs incorporated in the general education curriculum, and it recommends that school subject-matter be conveyed using less abstraction and more practical applications of language, mathematics, the natural sciences, and the arts. The curriculum should provide for visits to enterprises on a regular basis in the early years of schooling, and for opportunities for older children to spend periods engaged in practical work in enterprises. (Letter of response, Conseil National du Patronat Français, in Mission Education-Entreprises 1985, 152; Goebel et al. 1984, 46)

Teacher Training.

The Association of British Chambers of Commerce takes the view that:

> ... too few teachers have experience of the world of business, and [they] are all too likely to view industry as a largely political issue, while many question whether the basic principles on which business operates are ethical.

The remedy, they assert, is greater contact:

> Teachers with no experience of business should be encouraged to seek it. The value of such experience should be reflected in salary and career progress. (Association of British Chambers of Commerce 1984)

The counterpart French organization takes the same view, that teacher preparation and in-service training should include instruction in economic realities and in the experience of working life. They recommend, specifically, that regional inspectors and teachers of geography and history should be taught the real facts about the economy, that teachers should have the opportunity to acquire continuing education through meeting business people and through visiting firms in, for example, summer courses. (Assemblée Permanente des Chambres de Commerce et d'Industrie n.d.2)

In like manner, the Institut der Deutschen Wirtschaft (the Institute of the German Economy) wishes to encourage business to provide teachers with economic education and experience in the business/industry world, in both their initial and in-service training (Goebel 1980, 333-335). In the view of Paul Schnittker, President of German Handicrafts, Arbeitslehre (familiarization with the working world) should be a compulsory subject for all teachers undergoing their training. ("Technical change triggers new discussion on education content", 1984, 90)

Thus, there is considerable agreement by business organizations and individuals in Britain, France and Germany that initial teacher training should include compulsory courses, materials, and experiences designed to introduce student teachers to the realities of the workplace. While in service, teachers should be provided with opportunities to broaden their knowledge of the economy, and to keep up-to-date. This could be done by facilitating regular visits to enterprises, arranging summer internships for teachers in business enterprises, opportunities for teachers to give courses in enterprises, and easing the access of personnel from business/industry to the schools. In addition, business/industry organizations urge their members to sponsor partnerships with individual schools and groups of schools, to make available to the teachers more printed information about themselves and about the world of work, and to be as explicit as possible about the specific educational characteristics they would like to see in the young people they hire. All of this should be aimed at helping teachers overcome ignorance about and prejudice against the business world, to reduce the chance that they will impart to their students negative attitudes toward business, either consciously or unconsciously.

Management and Structure of the School System.

Business/industry recommends a sharp improvement in the management of schools, to help them become more effective users of society's resources. School administration should learn from business practice. The Institute of Directors in Britain wants at least one member of each maintained school's governing board to be appointed specifically as a representative of employers (Times Educational Supplement, October 12, 1984). As in the commercial world, so in the world of education, argues the Institute of the

German Economy, competition will tie education more closely to the changing demands of the market-place, thus improving quality (Goebel et al. 1980, 32-33). As in the commercial world, too, teachers (as producers) should have clear, agreed, and regularly monitored objectives in mind, and should be held accountable for their performance (Association of British Chambers of Commerce 1984). The strong State monopoly of educational provision should be tempered by strengthening non-State (private, foundation, business/industry) institutions and arrangements in education. Personnel coming from business and industry should be permitted to serve in the schools (Assemblée Permanente des Chambres de Commerce et d'Industrie n.d.2, Propositions 8-9). Wherever possible, business initiatives should be supported by tax relief, or subsidies.

Business/industry makes specific recommendations for changing the structure of the school system and rationalizing the articulation of its several levels and institutions. The recommendations differ in detail among the three countries, as each has its own established pattern of institutions. But across the three countries the general tenor of the recommendations is the same: the position and prestige of those parts of the system providing vocational training and direct preparation for work need to be enhanced vis-a-vis the more purely academic parts; the prestige of vocational credentials should be raised; and opportunities for students to move from one part of the system to another should be improved. Thus employers in Germany take the view that,

> . . . it is no longer sufficient for the gymnasium to be seen simply as a school that prepares for higher education. . .
>
> Thirty percent of gymnasium students are already interested in a job-related training in the dual system. So those preparing for the Abitur should get the most comprehensive knowledge of business practice as possible. (Goebel et al. 1984, 46,48)

And in France,

> Our member companies have always rejected fundamentally the idea of an opposition between what is called "general" and "disinterested" and what is still criticised as "utilitarianistic" because it is vocational. Thus, the creation of a technical baccalaureat is [as the report indicates] a key factor in raising the prestige of vocational training.' (Letter of response of the Assemblée Permanente des Chambres de Commerce et d'Industrie, in Mission Education-Entreprises 1985, 131)
>
> The apprenticeship system needs to be developed, especially by opening access to the newly-created vocational baccalaureat, according to each occupation's needs. (Letter of response of the Conseil National du Patronat Français, in Mission, op.cit., 152)

Employers want changes in the structure of the educational system that are likely to improve the connections among the various educational and training institutions and they seek credentials that are more useful for hiring purposes. For example, in France, the Assemblée Permanente des Chambres de Commerce et d'Industrie recommends alternating periods of schooling and work (Charte, op.cit., 16). In England, the Chambers of Commerce recommend better connections among the parts of the system:

> The secondary curriculum cannot be designed in isolation from the curriculum in primary and junior schools. The need for continuity also exists beyond the secondary schools in the Youth Training Scheme, apprenticeships, further education, higher education and adult training. (Association of British Chambers of Commerce 1984, Recommendation 11)

The demand for better connections implies more effective scholastic and vocational counselling, a point made by the Institut der Deutschen Wirtschaft, among others.

British employers would like to see a reformed system of credentials, that would go far beyond a simple recitation of academic achievements, to include a student profile.

> We urge all LEAs to introduce, in consultation with employers, some form of pupil profile. ... The objective ... must be the introduction of a standard format for reporting to prospective employers on the aptitude and achievements of the school leaver. (Association of British Chambers of Commerce 1984)

They ask also for greater uniformity and systematization of what appears to them as a "bewildering array of courses, course providers, and methods of assessment."

There is widespread agreement that partnerships between enterprises and the schools should be formed, and where they exist, they should be strengthened, so that the abyss separating the world of the school from the world of work is closed. Too much preparation for work continues to be located in schools, and more should be done within enterprises.

> The twinning of education and business, as long as it is done in a suitable framework . . . seems to us to be a good route. [Necessary elements for this are] practical experience for teachers in enterprises, and business participation in LEP and lycée technique programs. (Letter of response of the Conseil National du Patronat Français, in Mission, op.cit., 152)

> . . . the transition from school to work must be made as

easy as possible. For this, partnership and co-operation between the school and local employers are essential. . . .Industry prefers to manage the provision of training itself and sees the job of schools as providing a foundation on which training can be based, supplying trainable, but not trained recruits. (Association of British Chambers of Commerce 1984)

The independence and the special character of education for work must be emphasized even more. Enterprises and vocational schools must be equipped to be able to fulfill training requirements, through inter-company cooperation (Goebel et al. 1984, 78).

The German dual system of vocational education, in particular the reliance on apprenticeships, finds strong support among employers, although it receives criticism from school people. Approving the example of their German counterparts, French and British employers generally recommend moving vocational education closer to the German system, but, as in Germany, they too face opposition from many spokesmen of school-based interests.

In making recommendations for desirable changes in the schools, business/industry spokespersons are wary of the schools taking over training functions that they believe are best left to business initiative. They also warn against government control of training given within firms, and (in France, at least) they do not view government subsidies to training as justification for detailed governmental regulation of their apprenticeship programs. Thus, in France:

...we have never been opposed to the Ministry of Education's participation in the continuing education of employees. But in this area the market must be free; the problem is precisely that the Ministry is about to propose services that will compete [with those already provided by business]. (Letter of response of the Conseil National du Patronat Français, in Mission, op.cit., 152)

We reaffirm our hope of avoiding all regulations that might limit the freedom of the company head to choose among financial options (apprenticeship tax), or among employment or training policies. (Position paper of the Confédération Generale des Petites et Moyennes Entreprises, in Mission, op.cit., 149)

In Britain, an Imperial Chemical Industries memorandum cautioned a House of Commons committee about the onerous and counterproductive financial regulation of government subsidized training schemes in industry, and also observed:

We would however wish to re-emphasize our view that there are some aspects of education and training...that it is for the employer to provide and that the schools should not be expected

to attempt. (Great Britain. House of Commons 1983, 217)

In similar vein, the German private sector continually strives to maintain its own direct responsibility for vocational training, and opposes any attempts at intrusion or take-over by the schools. (F. Edding, private communication, Nov. 1984)

An overall stance taken by business/industry to the conditions for partnership with government and the schools is that they should be given a freer hand, with less red tape associated with getting involved with education, and with less concentration upon detailed accountability. This attitude is taken in the name of facilitating pragmatic experimentation, quick response to perceived needs, and the capacity to change direction quickly as some things are seen to work and other not. (Confederation of British Industry 1981, 117; Jamieson and Lightfoot 1982, 106)

Although the recommendations made in the three countries are remarkably similar, both in premises and in specifics, the posture taken by business/industry toward its "educational responsibilities" varies. In France, business organizations tend to defer more to the education authorities and the teaching profession than in the other two countries, although their claims to a voice in educational policy are growing. In Germany, where business/industry involvement in training policies is long-standing, there is no hesitation on the part of business organizations in making recommendations for far-reaching change. In Britain, business organizations, taking a relatively new stand, assert the necessity for business to get involved in setting policies for education, and even business/industry's positive right to do so. They point out that not only does the world of work have a <u>special</u> claim to be heard, but that education and business are mutually dependent, have common interests and many common purposes, and must therefore cooperate as partners. (Association of British Chambers of Commerce 1984)

III. PARTICIPATION

Business/industry has become involved with the education of young people beyond simply offering criticisms and making recommendations for change. Since roughly 1975 their active participation has been stimulated by a number of increasingly important factors. The downturn in economic growth and a sharpening of economic competition among nations, combined with increasing numbers of young people in the age-groups leaving school, resulted in rapidly rising youth unemployment rates. These reached quite unprecedented levels in France, for example, where the percentage of unemployed males aged 15-19 increased from about five to over twenty per cent in the period from 1974-82, and in the UK, from a similar level to nearly thirty per cent (OECD 1984:2, 26). In Germany, however, the rise was much smaller, from close to two and a half percent to about seven per cent. These figures were interpreted as demonstrating the extent to which the existing structures and content of secondary schooling had become outdated, despite the prolongation of schooling for many. Moreover, technical progress had apparently eliminated many low-skilled entry level jobs formerly available to school leavers, creating a problem which had every prospect of worsening in the future. Thus there was a widespread feeling that even when economic growth rates improved, and the size of the entry level age groups fell, a severe problem of adequate education and training of the young labor force would remain.

The result has been a new focus in all three countries on the requirements of so-called "transition education", in which business/industry would play a larger role than ever before, not only in its more usual training function but especially in an increasing contribution to general education. This has called for changes in the legislative and regulatory frameworks for education and training, for changes in financial arrangements, for novel institutional functions and provisions, and for greater acceptance of business/industry as a full partner in a total national education and training enterprise.

The following three sections of this chapter are devoted to the context and the experience of each of the three countries, as business/industry participates in activities aimed at a more directly work-relevant education. These endeavors take a variety of forms, among which are: providing an increasing number of teachers and students with opportunities to observe life in the work place and gain practical experience; joining with the schools in twinning and partnership arrangements to improve communication and cooperative work ties between the world of learning and the world of earning; providing schools with material and human resources, and opportunities to collaborate directly with business/industry; and sponsoring many kinds of activities, local and national, designed to encourage the development of work-related skills, an appreciation of the importance of efficiency in production, and a more positive attitude toward business/industry.

1. Britain.

The distinction between education and vocational training has been quite sharp in Britain, where vocational training has been regarded as a substantially inferior preparation to academic education. Until the passage of the Industrial Training Act of 1964 the principle of non-intervention by the State in job-training had for the most part prevailed, and business/industry was considered to have sole responsibility for preparing its own work force. The State had assumed responsibility for providing general education, and there was little expectation that commerce and industry had any part to play, except with respect to particular craft and technical qualifications. General education remained predominantly within the jurisdiction of the local education authorities (LEAs), who guarded their prerogatives quite jealously, and who were unaccustomed to accept advice from non-professionals concerning the educational system they provided.

The 1964 legislation marked a new view of the role of employers in the education and training of young people. Since that date, legislation (for the most part permissive, and intended to encourage activities at regional and local levels) has increasingly drawn the State into the training field, while growing business concern about the quality and structure of schooling has led to greater involvement of employers and unions with schooling.

The contemporary role of British employers has been summed up in the following terms:

> Business and industry take an active part in secondary education by supporting such initiatives as the Technical Education Initiative of the Manpower Services Commission, the School Curriculum Industry Project, Understanding British Industry and in a number of school company links (CBI, private communication, 2 Feb 1985)

Employers may also exercise advisory powers, both regionally and nationally, with respect to the general education provided in LEA schools.

Apprenticeships and other types of in-company training continue to be entirely in the hands of employers' associations and trade unions, though the State, through regional Industrial Training Boards (ITBs), has played a growing part in expanding provisions for apprenticeships.

Employers (and trade unions) are represented on the numerous examination boards that award credentials in craft and technical areas. These boards are important in Britain, because their examinations serve a coordinating role in the extremely diverse system of further education and training. The examination boards in the vocational training areas have a decisive influence over the curricula of the colleges and schools preparing

students for business/industry, which in turn gives ready recognition to the credentials awarded by the examining authorities. The most notable of these are: the Royal Society for the Encouragement of Arts, Manufactures and Commerce (RSA), an independent body founded in 1774, now primarily concerned with secretarial, commercial, and public administration occupations; the City and Guilds of London Institute (CGLI), the largest such examining body, with between 400,000 and 500,000 candidates a year in the manual trades and other basic skill areas; the Technician Education Council, which since 1973 has progressively assumed responsibility for the establishment of curricula and examinations for middle-level qualifications from CGLI; and the Business Education Council, established in 1974, to develop curricula and qualifications below the university level for clerical, commercial, and administrative occupations. (CEDEFOP 1984, 453)

Beginning in 1964, the introduction of a levy/grant system placed pressure on employers to increase the quantity of vocational training they provided. A tax of up to 1% of the payroll was imposed on (larger) companies that did not have their own training schemes, and the proceeds were used to compensate companies offering training. New bodies, called Industrial Training Boards (ITBs) were established to administer the levy/grant program. Companies thus paid the costs of on-the-job training, while the LEAs continued to cover the costs of general education.

> Anecdotal evidence indicates that company expenditure on ET [education and training] in the UK declined considerably in 1981 and 1982 and began to recover somewhat in mid-1983 . . . a first British priority is to get better value for money . . .Without the wealth, size and 'frontier' tradition of the US, Britain may not be able to afford a process in which each company decides not only what ET it wants internally but also what it wants the public education service to supply and in which each company has the capacity to negotiate for what it wants with the appropriate public authorities. (National Economic Development Council 1984, 90)

In 1973, the Employment and Training Act established an independent Manpower Services Commission (MSC), charged with responsibility for developing a national training effort. The Act was partly a response to complaints from smaller employers that they derived little or no benefit from the levy/grant system. Since 1973, the Manpower Services Commission has increased so rapidly that it has been termed "Britain's fastest growing quango". ITB activities have been increasingly taken over by the MSC, and it is expected that training through ITBs will cover no more than about 25 per cent of the youth labor force, predominantly in construction and engineering. For the rest, MSC has administered a changing menu of work-subsidy and youth training programs involving employers. The most important date from September 1983, with the establishment of the Youth Training Scheme (YTS) and the Technical and Vocational Education Initiative (TVEI).

YTS is directed at the post-16 age group, to guarantee a 12-month training period for unemployed school leavers. MSC is currently proposing extension to two-year programs. Training takes place either in firms (who receive public funds amounting to about $3000 per training place), or in a variety of off-the-job training establishments run by local authorities. The YTS has incorporated three or four prior government initiatives that encouraged employers to give school leavers work experience or training, or both, although YTS' target of providing 400,000 training places has not yet been completely met.

The Technical and Vocational Education Initiative (TVEI) promotes technically-oriented and vocationally-relevant courses for the 14-18 age group in schools and colleges. Pilot courses were instituted in 14 LEAs in 1983, and the activity was extended to a further 45 LEAs the following year. By September 1984 the program enrolled 16,000 students. Courses are intended to provide general as well as technical education, vocational preparation, and work experience for young persons of all levels of ability, including senior grade students in academic secondary education (sixth formers). The courses are intended to be attractive to those students in the post-compulsory grades who do not intend to proceed to higher education, and thus to help widen curriculum and career choices. In this connection, the new Certificate of Pre-Vocational Education (CPVE) should be noted. Its introduction was strongly supported by both the CBI and the Trades Union Congress (TUC), and it was designed especially for those sixth-formers who may not wish to sit for the Advanced Level (academic) examinations.

Funding levels for these programs were as follows (£1 = $1.35, approximately):

Industrial Training Boards, 1981-82	£117 million
Youth Training Scheme, 1983-84	£845 million
Technical Vocational Training Initiative, 1983-84	£ 7 million

(MSC, Annual Report 82/83, cited in Ryan April 1984, 33)

A number of business/industry-related organizations are actively involved in secondary education, some from business/industry exclusively, others with a wider membership. The main ones are as follows:

The Confederation of British Industry (CBI), founded in 1965, is a national organization representing directly or indirectly 250,000 companies. Its stated purpose is to be the recognized spokesman for the "business viewpoint" and to insure that the British Government understands the intentions, needs, and problems of British business. It has become increasingly concerned with educational matters, and it promotes the business/industry point of view on education and training policy by issuing policy statements, by giving evidence on behalf of its members to parliamentary committees and Royal Commissions, and by collaborating with other organizations active in education. CBI has participated in the Schools Council Industry Project (see Example 1), and in 1975, it initiated a program called Understanding British Industry (UBI), to help secondary

school teachers improve their understanding of the role of industry and commerce in creating wealth (see Examples 2 and 3). CBI also encourages and facilitates a range of school-enterprise arrangements at the local level (see Example 4).

The Standing Conference on Schools' Science and Technology, was founded in 1971 to promote and encourage the development of science and technology in the schools. It is supported by the government (specifically the Departments of Education and Science and of Trade and Industry), the engineering profession, industry, and its member organizations. It has established a network of some 40 regional organizations (SATROs) that promote and participate in activities involving schools and the workplace in different ways (see Example 5). Projects depend upon local cooperation and support, and reflect local interests. The Standing Conference supports the local organizations financially, providing seed money to initiate projects and helping participants raise funds for activities from both public and private sources. It actively supports measures to increase the numbers of females entering traditionally male occupations (see Example 6).

The British Institute of Management is another national organization, that describes its functions as:

> ...maintaining a constructive dialogue with Government departments and national bodies concerned with secondary education; supporting BIM members and subscribing organizations in their work both locally and regionally (including the extension of schools/industry link activities to new areas); co-ordinating BIM activities with those of other organizations to avoid duplication and overlap. (British Institute of Management 1984, 8)

Work experience schemes have been instituted by schools, localities, and regions, to serve a number of educational objectives (see Examples 7, 8, and 9). Most extra-school experiences in secondary programs are closely related to career preparation and specific job training. Some of these arrangements have been in place for a considerable time, but the number and extent of opportunities for students to gain practical experience have greatly increased in the past decade as a result of national incentives and local initiatives. Large companies have initiated many projects to develop curricular materials for use in schools, to offer work experience, and to make available training places (Example 10).

Due to the local nature of such arrangements, estimates of their extent vary considerably according to their source and the definitions used. For example, the results of a survey made in 1975-76 estimated that only 7 per cent of school leavers had been involved in a work experience scheme. (Walton 1977) A survey by Her Majesty's Inspectors of Schools of a representative sample of secondary schools found a substantially greater coverage in terms of number of schools involved: "one hundred and forty-two schools (37 per cent of the sample) provided work experience for their fifth

year pupils." However, it was also noted that: "the duration of work experience was mostly five days or less." (Department of Education and Science 1979, 236) It was found, too, that few of the more academically able students had had an opportunity to participate in work-experience programs.

It is not possible to provide comprehensive figures of the number and types of arrangements to bring the schools and business/industry closer together. However, the examples that follow are likely to be representative of what is undertaken. They cover business/industry involvement in the general secondary school curriculum as well as in strictly vocational education and training, in school- and enterprise-based programs, in formal and informal activities with schools, in the movement of people between firms and schools, and in provision of information and advice on careers.

Examples

1. The Schools Council Industry Project is a collaborative attempt, joining business/industry and trade unions with school authorities, to reform the general secondary school curriculum. The purpose of the project is to teach about the nature of industry and industrial society. It includes work experience as part of the curriculum and has promoted changes in the syllabi of academic studies, including notably history/social studies. The project was mounted jointly by the Council, the Trades Union Council (TUC), and CBI in 1977 when a number of pilot schemes were instituted in five local education authorities. By 1983, schools in twenty-six LEAs (about a quarter of the total number) were making use of approaches and materials generated by the Project.

In addition, the project carries out research over the whole schools/industry field, with particular emphasis on work with 8-13 year olds, work experience, the effect of school-industry liaison on the structure of schools, and in-service training of teachers within industry. A national network of full-time teacher coordinators works in the participating LEAs. Their role is to develop the curriculum by intensive work, initially within four to six schools. Furthermore, teachers collaborate with employers and trade unionists to prepare work for pupils to suit the needs and priorities of the school. People from industry are also involved in working alongside pupils in the classroom. The project encourages the development of work experience on a strictly non-vocational basis as an integral part of the curriculum.

2. Understanding British Industry (UBI), sponsored by the Confederation of British Industry, has as its major purpose the improvement of understanding of the role of industry and commerce in creating wealth. To that end, it promotes in-service training programs for teachers on the relationship between secondary school curriculum and business. It encourages the appointment of a Schools/Industry Liaison Officer in each LEA (to date, approximately 80 have been appointed), and it has developed programs to facilitate the secondment of teachers to work in industry for periods of up to two years. National and regional employer organizations have participated by appointing staff members to develop curriculum or to administer programs that bring schools and business/industry together. The

activities of UBI are supported by donations from companies and individuals. (Understanding British Industry 1983-84)

3. Teachers in Industry aims at exposing school staff members to life in the industrial sector. Sponsored also by the Confederation of British Industries and conducted by local and regional organizations, this is an effort to meet some of the criticisms noted above, about the negative attitudes of teachers toward business/industry, and their ignorance of its value and role in society and of the world many of their students will enter. Teachers (mainly from secondary schools) and teacher trainees spend a period of time in an industrial or commercial concern in a program arranged through mutual consultation. Teachers remain on salary; other costs are borne by the company concerned. Fifty-six LEAs (about half of the total) participated in this scheme in 1980, though it is estimated that so far only three per cent of school teachers and principals have been involved in these work experience schemes.

The involvement of the staff of the King's School, Grantham, in "Teachers in Industry", has led to the establishment in Lincolnshire of a center for industrial studies, believed to be the first of its kind. It is under the joint authority of the Department of Trade and Industry and the LEA. The LEA provides accommodations and 25 per cent of the costs of the project; the DTI provides 50 per cent, and the balance is to be raised from local industry and other organizations.

4. Project Trident, sponsored by CBI, encourages firms to arrange work experience for school pupils, and to second employees to work with the schools in making such arrangements. During the school year ending 1981, the project worked with 500 schools and 4,000 employers, providing 19,000 students with work experience of three weeks duration. Finance for the project comes from donations from industry, charitable trusts, and LEAs.

5. A growing network of Science and Technology Regional Organizations (SATROS) is supported by donations from industry, and resources from central and local government, and educational institutions. In 1983, SATROs received approximately £240,000 ($312,000) for their entire range of projects from their parent body, The Standing Conference on Schools Science and Technology. In addition, each SATRO raises supplementary money and support in kind locally. The 40 SATROs located throughout Britain cooperate with and extend services already at the disposal of teachers. They also initiate and support closer liaison between education and industry in a number of ways: industry-related project work in schools; lectures, work experience, careers events, and science fairs for young people; lectures, conferences, exhibitions, and periods of training for teachers; and curriculum development in science and technology for the schools. Most SATROs have full-time staff and they all involve people from schools, industry and commerce, LEAs, the careers service, and professional bodies.

The annual report of one SATRO, the Centre for Industrial/Educational Liaison at Teeside Polytechnic, illustrates the range of activities and support:

In the spring term, a further course for teachers was arranged on "Applications of Microcomputers in Science and Technology Experiments." In March a discussion meeting was held for teachers and industrialists on 16+ Physics Examinations, with speakers from the examination boards. This was to explain the reason for these examinations, to clear up misunderstandings -- particularly in industry -- and to distinguish them from those being considered for the national criteria. The meeting was summarized in an Occasional Paper which has been distributed widely. The "Schools-Industry Project Week" was once again held at the University of Durham with 18 teams taking part, each comprising two pupils and a teacher. We were again well supported by local industry, both financially and by the provision of ten chemistry and eight engineering projects. For the first time, the pupils spent one evening participating in an industrial game, which proved to be very popular and energetic. Following discussions between chemistry teachers and ICI (Imperial Chemical Industries), a series of visits was arranged to Agricultural Division's plant at Billingham. These took the form of talks on various processes relevant to the curriculum, such as ammonia and sulphuric acid manufacture, followed by a conducted tour of the plant. In all, four visits have been arranged, involving 76 teachers and it is hoped to follow this with visits for pupils. Plans are now in hand for similar visits to other local companies. (Standing Conference on Schools' Science and Technology 1983, 10)

6. Together with the government's Equal Opportunities Commission and the Engineering Council, the SCSST sponsors Women into Science and Engineering (WISE). The project encourages the participation of industry in its efforts and collaborates with schools in a program of publicity, conferences, and exhibits. Its current activities focus on development of an action program for schools, colleges, and industry to raise the number of women employed in scientific and technological occupations. Major funding has come through a grant from the Engineering Council.

7. Young Enterprise is a scheme to encourage practical learning about business for 15-19 year-olds in school. It sponsors groups of 20-30 students to form a trading company and run it as part of their school activity for 8 to 9 months under the supervision of a teacher and with the advice of one or two advisers from local firms. They meet, as a rule, for weekly sessions of two hours to raise capital, invest, study the accounts, and revise their operations based on what they learn. Started in 1963, "Young Enterprise" is "a veteran among the 100-odd concerns now working in the school-industry field." (Times Educational Supplement, January 3, 1986, 6). At the commencement of "Industry Year 1986" (see below), three large companies donated £100,000 for each of the following three years to support the activities of the organization, which currently registers over 700 student-run enterprises.

8. The Powys Rural Enterprises Project (P.R.E.P.) is concerned with developing school curricula and improving links between the schools and local craft and business enterprises in a rural county in Wales. Though administered by the local education authority, it is sponsored by regional government authorities of education and economic development, and has an advisory group that includes representatives from local firms and trade unions. The project's target population is young people aged 16-18 in thirteen secondary schools, two residential special schools, and three further education colleges in the county. Activities involve information gathering and dissemination, direct communication among students, school, and business persons, and curriculum development, to be achieved though networking and interagency collaboration. Beginning as a local enterprise on a pilot basis, it is to become (1985) a part of YTS. (European Community Action Programme 1984, 121-124)

9. The diversity of local initiatives in Britain is indicated in the booklet, Schools and Working Life (Department of Education and Science 1981). They include: a school project making use of the expertise and resources of a local construction company to design, cost, and create a model of a leisure complex; and cooperative arrangements among a diverse group of local companies and a school or local education authority to provide students with work experience. Placements varied in duration, in particular objectives, and in form, but had two common features: they were jointly planned by teachers and representatives of companies, and they were conceived as extensions of the school curriculum and not merely as recruitment and training for a particular employer or occupation.

10. Between 1978 and the end of 1982, Imperial Chemical Industries has provided some kind of training and work experience opportunity for approximately 3000 young people in its plants on Teesside. ICI has responded vigorously to the opportunities afforded by the successive government programs of job- and training-subsidy. The firm's programs include training in its own offices, laboratories, and production units; leadership in a consortium of some 200 other firms to provide practical work experience and life- and social-skill training; and project-based schemes, particularly designed for less academically able young people. Examples of the latter are: renovation of a convalescent home, and installation of a training workshop in abandoned industrial premises. A recent development has been ICI's provision of an alternative to traditional apprenticeship. This takes the form of a "foundation year" of training for almost 200 youngsters, some of whom will then go on to apprenticeships. (Great Britain. House of Commons 1983, 44)

General Electric Company and CIBA-GEIGY have invited 10 school teachers to work with them to produce new instructional material for science teaching. Thomson Holidays and IBM have joined with Birmingham Educational Computing Center to run a business game competition for Sixth Formers in Birmingham area schools. British Aerospace Dynamics Group sponsors school/industry workshops for science teachers. They are intended to provide examples of the company's projects that can be used as instructional material in the schools. Standard Telephone and Cables provided the equipment to enable primary and secondary schools to hold an exhibition of

work done in microelectronics (Standing Conference on Schools' Science and Technology 1983, 5, 9, 13, and 14).

11. A careers information and dissemination service is provided by the Careers Research and Advisory Centre (CRAC). This organization operates the CRAC Insight Program for academically able senior high school and college students. Its major aim is to encourage such students to consider careers in business/industry. Program activities include four-day courses run by tutors seconded by industry, business schools, and higher education, where students and young managers can meet. They explore the nature of managerial work, using business games, role play, and case studies. In addition, CRAC Insight runs shorter courses for teachers, develops business education materials in cooperation with supporting companies, and facilitates the placement of students in business/industry. Young managers from industry act as voluntary field staff. Costs are covered by the business/industry organizations nominating volunteer managers, educational institutions, and students.

12. Industry Year 1986 was initiated by the Royal Society for the Encouragement of Arts, Manufactures and Commerce (RSA). It aims to encourage better understanding of industry and seeks to engage a large number of people and organizations in a program of regional and national activities. The RSA has identified three areas for action: to heighten general awareness of industry's contribution to the community and its quality of life; to accelerate changes in existing structures, e.g., to include an industrial element in every teacher training course and to encourage all schools to enter into twinning arrangements with a local company; and to encourage self-improvement in industry.

Conclusions.

Two main characteristics distinguish business/industry involvement in the education and training of young people in Britain: active encouragement of local firms' participation by the national voluntary organizations of employers; and local collaboration of individual firms with schools and LEAs.

Legislation and initiatives of government agencies have been important in setting out the guidelines for these activities, revising the organizational frameworks necessary, and providing financial incentives for companies to increase job training opportunities.

In the course of developments over the past decade, the traditional separation of academic general education from vocational training has narrowed. Business/industry has contributed to new thinking and practice in general education, has expanded its training activities, and has participated in revisions of examinations and proposals to introduce new credentials, and new forms of assessment.

Business/industry involvement over all aspects of education and training is of recent date, and has been growing rapidly. The result has been a series of new initiatives and the blurring of the distinctions

between academic and vocational education. This in turn has led to anxiety over what is regarded as vocationalization of the school curriculum, and rising tension between the Manpower Services Commission and the Department of Education and Science. As a memorandum submitted to a House of Commons committee by Imperial Chemical Industries noted: "... the national organizational relationships between MSC and DES undoubtedly have within them the potential to generate unsatisfactory local competition which can only in the end act to the disadvantage of the young people themselves." (Great Britain. House of Commons 1983, 218)

2. France.

In France most pre-service vocational training is undertaken full-time in the schools as part of general education. Moreover, as a consequence of the Haby Reforms of 1975, all 12 to 16 year-old students receive an introduction to manual and technical subjects, as part of a common, comprehensive curriculum at the lower secondary stage.

For most pre-vocational training, the Ministry of Education promulgates curricula, sets standards, and provides staff, finance, and facilities. However, for the purposes of academic organization and educational provision, France is divided into 25 so-called académies. Nineteen commissions professionelles consultatives (CPC), (vocational consultative commissions), one for each major economic sector, advise the Minister on such matters as the establishment of training courses and diplomas, curricula, and the number of training places to be financed. The membership of the CPCs is representative of the major interested parties: government, employers, chambers of commerce and trades, workers, teachers, parents, and experts. (Le Monde de l'Education May 1982, 17)

Firms have only recently begun to play an active and direct role in pre-service training; previously, business/industry involvement was virtually entirely confined to contractually-based apprenticeships (see Example 10). Employers influence initial vocational preparation in the schools through local arrangements and are involved nationally with the school system through participation in the councils that govern the lycées techniques (technical lycées), and on the examination boards of the LEPs (vocational education lycées). Representatives of the skilled trades sit with education officials and teachers on boards of examiners. They will often participate in instruction in the vocational schools, and help define the curricula and examination regulations. (T.Malan, private communication, April 1985)

Business/industry is formally involved in educational matters through national organizations of employers, workers, and the specialized trade- and craft-based chambers. In each of the 25 académies, a Ministry of Education nominee is responsible for coordinating all in-service training activities. This official presides over the regional center for the training of advisers working with firms to establish their in-service training needs, and with schools, collèges and lycées to establish the arrangements to meet those needs. Instructional staff who provide in-service training receive supplemental pay financed from the proceeds of a payroll tax. Business/industry in France has been acknowledged as a "social partner" (together with unions) of the public authorities for the continuing education of school leavers and young workers. This is organized within a legislative framework established in 1970-71 (the National Inter-Trade Agreement of 9 July, 1970, for vocational and continuing education, signed by employers' and employees' organizations; and the Law of 16 July, 1971, for continuing vocational education). However, this legislation was passed during a period of vigorous economic expansion and shortages of skilled labor, circumstances that have since changed.

The major national organizations of employers involved with educational policy are the Confédération Générale des Petites et Moyennes Entreprises (Confederation of Small and Middle-Sized Enterprises), and the Conseil National du Patronat Français (National Council of French Employers). In addition, there are three national chambers which include employer members and discharge important education and training functions for companies: the Chambres de Commerce et d'Industrie (Chambers of Commerce and Industry), the Chambres de Métiers (Chambers of Manual Crafts), and the Chambers of Agriculture. These chambers provide an organizational framework for employer participation in training, establishing training facilities, supplying instructional staff, and setting standards for qualification in their respective occupations.

The appointment of the Bloch commission in October 1984 underscored French governmental interest in promoting closer collaboration between education and business/industry, with the aim of improving both sectors of society. The Commission included education system administrators, higher education officers, and representatives of business organizations and trade unions. They were charged with the task of reviewing conditions and making recommendations regarding overall educational policy and practice, and they were also asked to consider specific ways in which regional and local initiatives might be promoted, particularly in the form of joint school-enterprise consultation and activities. The eventual report, entitled Mission Education-Entreprises: Rapport et Recommandations, May 1985, set out a program for tying education and the economic sector more closely together. Representatives of the national employers' organizations cited above participated in formulating the report and in the public discussions that took place after its appearance. An important outcome of the Bloch Commission's work has been the legitimation of participation by associations of employers and organized labor in the policy and practice of general education and vocational training.

The major source of funds for full-time apprenticeship education is the payroll tax levied on most firms (Centre International d'Etudes Pedagogiques September 1984, 24). Since 1925, a taxe d'apprentissage, amounting now to just over one-half of one percent of their payroll has been levied on French employers, who have the option of paying the proceeds directly to a secondary or higher education institution of their choice, rather than to the Paris Treasury. In 1971, a further tax, the taxe de formation continue (continued training tax) was introduced. This tax amounts to 1.1% (minimum) of payroll. It is payable by firms employing 10 or more workers, and the proceeds are used to support both general and vocational recurrent education, either in courses run by the firms themselves, or in those given in other establishments. In 1982 for firms in France as a whole, the training tax contribution amounted to 1.96% of payroll, substantially more than the compulsory minimum (CEDEFOP 1984, 222). It is estimated that in 1981-82 about 6.5% of the working population (1.5 million out of a total of 23 million) participated in the in-service training organized and provided at lycées and collèges, and financed by these levies.

In addition to formal financial involvement of employers with

education, their national organizations have undertaken campaigns of information and consciousness-raising, to alert the general public about the importance of the business world, and to try to correct what it considers to be ignorance or misunderstanding among members of the general public. In 1984, an inventory of Chamber of Commerce and Industry activities along these lines identified a wide range of such public relations initiatives (see Example 9).

Government efforts to involve individual firms and organizations in a variety of educational activities as "social partners" has been a progressive development for about two decades. The Chairman of the national Chambers of Commerce and Industry has observed:

> The extremely positive results (from these partnerships) have for some years now resulted in public authorities increasing the number of programs that bring the schools closer to the economy: educational programs, internships for teachers. These have lead today to . . . twinning of lycées and collèges with enterprises. (Assemblée Permanente des Chambres de Commerce et d'Industrie n.d.1)

Encouragement of local and regional collaboration between schools and business/industry is a distinguishing feature of these initiatives, which have different emphases: Examples 1, 4, 8, and 10 represent the provision of opportunities for work experience; Examples 3, 5, 6, and 7 illustrate the joining of business/industry and the schools for collaborative research and design in development and/or training; Examples 4, 5, and 7 also exemplify the involvement of firms in providing schools with materials and equipment, while Examples 4 and 5 provide means of facilitating the membership of business/industry personnel on the schools' examination boards. Finally, informational and consciousness-raising activities, mostly directed at young people, are represented by Examples 2 and 9.

Examples

1. A project involving four widely separated academic regions (Lille, Nancy, Toulouse, Orleans-Tours) is aimed at improving contacts between business/industry and the schools, and, in particular, at designing a nationally applicable framework for raising the number and quality of work experience placements for 14-18 year old students in intermediate vocational (secondary) schools. These are students preparing for the CAP and the BEP in such trades as: carpentry, plumbing, masonry, office work, boiler-making, and maintenance work. A conscious attempt is being made to decentralize implementation to the individual school level, although ultimate control and responsibility rests in the hands of Ministry of Education authorities (European Community Action Programme 1984, 34-36). The project has recently grown to involve about twenty of the 1300 LEPs in six academies, and is intended to serve as a model for improving all educational programs that include work experience in enterprises.

2. In Strasbourg, the Association Jeune Information (Association for Youth Information) has brought schools and firms together by means of a booklet distributed to schools and pupils. Each page offers the name and address of a local enterprise, a description of its principal activities and staff, and the training and employment opportunities it can provide, together with the names and addresses of contact persons in each enterprise.

3. The Centre d'études et de developpement industriel de l'automatique -- CEDIA (Center for the Study and Industrial Development of Automation) was established on the initiative of the Lycée Benoit, L'Isle-s/Sorge, and in cooperation with local firms. Its four objectives are: applied research, improving interaction between makers and users of automated systems, continuing education of employees, and use of the Center's facilities to bring educators and industrial/technical staff closer together.

4. Plans are being made by the Centre Technique des Industries de la Construction Metallique (Technical Center for the Metal Fabricating Industries) and the government to bring enterprises in the metal fabricating trades into close contact with secondary schools preparing students for the various technical education certificates. Each school is to have a contact person in each enterprise. The project will: supply teachers with industry-based teaching aids, such as working models, plans, files, and calculations; facilitate visits to firms and offer opportunities for teachers and pupils to gain work experience; and facilitate membership by working professionals on the examining boards for the award of credentials.

5. The Ministry of Education and the Thomson company concluded an agreement to provide general training at a high level to the firm's employees. In addition, the agreement called for Thomson to receive trainers and students from the schools for work experience, to provide training materials to the schools, and to supply its professionals for service on examining committees in the schools. These arrangements have served as a model for recently concluded agreements between the Ministry and other large concerns, for example, the Compagnie Générale de Construction Téléphonique, Rhône-Poulenc, and Electricité de France - Gaz de France.

6. A number of special projects illustrate how local initiatives by either schools or companies may bring them closer together and provide opportunities for teachers and students to incorporate practical experience in their education. In Saint-Malo, for example, at the request of a local company dealing in construction materials, a lycée has designed and installed a computerised system of stock control and handling. An electronics firm in Tours has supplied a lycée with the electronic components and integrated circuits needed by an upper level electronics class for building an apparatus to regulate heating plants automatically. Four prototypes have been made and offered to local industry for manufacture. These and other examples were cited in the Ministry of Education's booklet, Education Nationale Entreprises 1985, 11-12.

7. In a series of so-called Projets d'action educative (educational action projects), business/industry has been encouraged to serve as

consultants and suppliers of expertise and materials to local schools, particularly to the lycées d'enseignement professionel (LEP). For example in Dreux, a lycée has been helped by the Fédération des oeuvres laiques d'Eure-et-Loir (Eure et Loir Federation of Lay Social Service Organizations) to produce a computer-controlled photographic developing apparatus as a class project. In Vendôme, a LEP sought and received expert advice from a local firm before developing a design for a project, and secured materials from an American company.

8. School-industry collaboration in training secondary school students is further exemplified by programs in Montpellier:

> In Montpellier, for a number of years, the Galleries Lafayette department store has been receiving interning pupils from several schools . . .mostly from a nearby LEP (lycée d'enseignement professionel) and from a lycée technique. Programs and internships in the accounting, sales, and secretarial departments have been organized at all levels, and on different schedules: 15-day sandwich courses for apprentices, 3-4 week educational courses for students preparing for the CAP (certificat d'aptitude professionel) and the BEP (brevet d'enseignement professionel), and two-and-a-half months for the BP (baccalauréat professionnel). . .(Cahiers de l'Education Nationale Jan.1985, 15)

Also in Montpellier, a twinning arrangement between the lycée technique and IBM will provide the school with access to IBM's expertise in computer design, technical information resources, and interning opportunities for students, and will provide IBM with continuing education opportunities for its workers (especially in technical English), and the development of some kinds of maintenance equipment. (Ibid., 14)

9. In order to acquaint students and teachers with the nature of life in enterprises, some local Chambers of Commerce and Industry (CCIs) are particularly active in organizing competitions among students, information fairs, conferences, opening production sites for pedagogical purposes, and facilitating exchanges between teachers and professional staff in business/industry (Assemblée Permanente des Chambres de Commerce et d'Industrie n.d.1). The CCI of Val-d'Oise, for example, has organised a three-day rally with visits to firms and competitive sports activities.

10. Representatives of the skilled trades have the leading voice in operating the Centres de Formation d'Apprentis (apprentice training centers), in which some general education and substantial vocational education are provided. The Chambres de Métiers (Chambers of Manual Crafts) alone or in partnership run nearly 90 apprentice training centers located throughout France. About two-thirds of French apprenticeship contracts are signed directly with master artisans, the remainder are negotiated through the apprentice training centers. A master must register the apprentice at the local training center, where he will receive at least 360 hours a year

of center-based course work (about two-thirds theoretical, and one-third practical). Instruction is often provided by personnel from the skilled trades.

Conclusions.

France has had a strongly developed system of vocational training in the regular school system, alongside a relatively limited system of apprenticeship training. On the initiative of the Ministry of Education, employers' groups were involved in establishing the curricular outlines and content of this vocational preparation, but they were excluded from participation in school-based training as well as from involvement in academic education in the schools.

This exclusionary policy has been greatly modified in recent years, with a good deal of central government encouragement for business/industry to offer teachers and students information, counselling, work experience, tools, materials, and opportunities for collaboration on specific production projects.

Other changes proposed to encourage business/industry participation in education and training have focussed on simplifying the financial arrangements for reimbursing firms providing such facilities, and on adapting the content and organization of training programs to the needs of small and medium-sized firms.

It is commonly assumed that French administrative style calls for central control of every detail of local operations, in the interest of insuring uniformity and equality across the entire country. However true this may be of school organization (and there are some doubts that it is indeed the case), it is decidedly not true with respect to involving employers with the school system and with training. Instead of detailed direction from the center, the central authorities and the national organizations have chosen recently to promulgate general frameworks of law and encouragement, leaving the regional and local organizations to determine the extent and the form of their activities in detail. As a consequence, there are substantial differences in employers' involvement to be observed, both among the various geographical regions of France and, within the regions, from one economic sector to another.

3. Germany.

In Germany, business/industry prepares nearly 70 per cent of young people of secondary school age for employment. This dominant business/industry role is accomplished within the "dual system", which provides for a division of responsibilities between the employers and government authorities. A further distinguishing mark of the German system is the decentralization of authority over school-based education and training to the 11 German Laender.

However, the general guidelines and specific content of training for each of the 439 occupations officially recognized (1983) are determined by Federal government agencies, employers, and trade unions. Much of this is in the form of apprenticeship training, which takes place within firms, but with provision for apprentices to be released from work for one to one-and-a-half days a week to continue their general education in vocational schools. The programs provided and implemented by individual companies are supervised by regional organizations with responsibility for maintaining standards and ensuring that Federal regulations are carried out. In this manner, vocational education is dominated by the firms and the associations of members of the major occupations. On the other hand, general education, whether full-time, or as a part-time component of vocational training, is determined by the Laender, with little direct input from either Federal authorities or business/industry.

The chambers of commerce and industry, crafts, and professions (Kammern) are provided for by law in each Land and they are charged with providing and administering many types of programs (including education and training programs) in their respective economic sectors. Individuals (firms and masters) are legally required to be members. The functions of the Kammern include appointing the boards to examine apprentices at the end of their training, with the boards' membership drawn from among employers, trade union representatives, and vocational school teachers. The Kammern thus exercise important influence over the implementation of vocational education, whether undertaken in the workplace or in vocational schools.

To the extent that employers dominate the training process and bear most of the immediate responsibility for training, "the apprentices are thus primarily under the authority and control of the firms which give them their practical training." (Max Planck Institute for Human Development and Education 1983, 242-3). Though largely of a practical nature, this training may also include classroom instruction in vocational material and (occasionally) elements of further general education. As noted above, the Land education authorities provide in-school general and vocational education to apprentices on release time. In-school training is shared fairly evenly between further general education and theoretical aspects of the occupation. It is mostly classroom-based, but may include opportunities for practice in school workshops.

Virtually all the costs of in-company training are borne by the employers, while the Land authorities bear the costs of in-school

education. It has been estimated that the total costs of vocational training (including in-company and in-school training) are shared in the ratio of approximately 40 per cent (Laender) and 60 per cent (employers) (Tanguy and Kieffer 1982, 71). The average annual expenditure (1980) per apprentice across all occupations amounted to some DM 17,000 (approximately $5,600), of which trainees' allowances ("wages") averaged $1,960, and the value of apprentices' output equalled $2,240. Net "instructional costs" thus amounted to about $1,400 per apprentice per annum (National Economic Development Council 1984, 16-17). Gross costs of initial vocational and educational training in 1980 amounted to 1.68 per cent of Germany's GNP, a major commitment of the nation's resources.

A number of full-time vocational schools also prepare a relatively few students for entry into apprenticeship programs. Other full-time schools extend the training given in firms, and/or provide training not otherwise available in release-time schools, or apprenticeships (Max Planck Institute for Human Development and Education 1983, 249-250). Although business/industry exercises the preponderate authority in its part of the dual system, it is has little or no role in the other (school-based) segment of the dual system.

Since 1965, the Bundesarbeitsgemeinschaft Schule/Wirtschaft (a Federal association of parties interested in the relationship between schools and the economic system) has coordinated and expanded a network of Arbeitskreise (study circles), to promote cooperation between teachers and business/industry and aid the preparation and transition of students to work. Starting in 1955 with seven study circles in one Land, by 1980 the number of circles had grown to over 300 in all ten Laender. They provide a means for teachers and educational researchers to obtain information and gain insight about the world of work and the economy. For its part, business/industry uses the study circles to improve its understanding of the requirements and tasks of the schools. Though the first Arbeitskreise attracted membership primarily from teachers in the less academic schools, in recent years teacher membership has extended to include teachers from the Gymnasium and from vocational schools. In addition, these regional groups facilitate the movement of students and teachers from schools to business/industry, and vice versa. Another major preoccupation of the Arbeitskreise is to combat what is thought to be growing skepticism in the schools concerning the value of technology, and to try to forecast the effects of technological change and its impact on the environment and the school system. (Bundesarbeitsgemeinschaft Schule/Wirtschaft 1983)

The Institut der Deutschen Wirtschaft (The Institute of the German Economy) is a business organization that has given a good deal of attention to educational policy and practice, and has published many research reports and policy statements, with proposals for change in German education.

The Kuratorium der Deutschen Wirtschaft fuer Berufsbildung (The Board of German Business for Vocational Education) in Bonn is a clearing house of information for business/industry interests. It sponsors conferences, studies, and reports on all aspects of education and training. It is supported by a number of employers' organizations: Bundesverband der

Deutschen Industrie, Koeln (National Association of German Industry); Bundesverband der Deutschen Arbeitsgeberverbaende (National Union of German Employers' Associations); Deutsche Industrie- und Handelstag (National Association of German Industry and Commerce); Hauptgemeinschaft des Deutschen Einzelhandels (Chief Association of German Retailers); Zentralverband der Freien Berufe (Central Association of the Professions); and the Deutscher Bauernverband (German Farmers' Association).

No doubt because employers in Germany are so heavily committed to the vocational education and training of young people in their transition from school to fully qualified employment, business/industry tends to play a sharply diminished role vis-a-vis the general education schools. This is reflected in the rarity of formal partnership activity and specific twinning arrangements linking firms with schools. However, business/industry activity outside the dual system is not entirely absent, and its various forms are represented in the following examples. Example 1 illustrates ways in which work experience opportunities are provided for Hauptschule teachers and, in Example 2, for school children. Opportunities for immigrant youth to gain more knowledge of employment conditions and possibilities are illustrated by Example 3; provision of information and instructional materials and resources to the schools (a number of programs noted in Example 4); special programs for the technical training of young women (Example 5); and the establishment of training consortia among groups of firms (Example 6).

Examples

1. An experimental program to provide work experience for Hauptschule teachers in one district of Baden-Wuerttemberg resulted in plans to implement the scheme more widely in the Land. Its target population was teachers of grades 7-9 social studies/economics, whose students would be making vocational choices in preparation for leaving school. The purpose was to provide teachers with personal experience of working conditions so that they might learn about the basic abilities and skills their pupils would need in the future. In addition, teachers would learn to understand the manufacturing process and the functions of business/industry in society, and to appreciate the physical and psychic stresses of work in business/industry. They would be seconded to training centers or manufacturing and service industries for two-week periods for a program including practical activity in production, interviews with workers and supervisors, observation, and discussions with fellow-participants in other firms. They would have the opportunity to learn about local and more general issues and themes connected with business/industry and society.

The local education office organizes the scheme with the help of teachers who have experience with local firms and who can develop and maintain the necessary contacts for placement. Local firms participate on a voluntary basis.

2. An inter-agency project in Kassel (Land Hesse) is based on long-term cooperation of business/industry with the public authorities in charge of employment and education and with individual schools. Its aim is to improve

the transition from school to working life and it focusses particularly on the lower secondary schools. Business/industry involvement is primarily in terms of providing opportunities for students to gain work experience and to learn directly about opportunities for employment. (European Community Action Programme 1984, 25-29)

3. A project located in and around the city of Mannheim focusses on the special educational and training problems of immigrant youth. The project is sponsored jointly by the Land and city authorities together with a business/industry funded organization, the Stifterverband der Deutschen Wissenschaft (Foundation for the Promotion of German Arts and Sciences). The project seeks to coordinate existing support facilities in the Mannheim region for assisting young foreigners with their education, training, and job search. Business/industry is directly involved by making their premises available for visits and periods of training; by making special efforts to recruit and train young foreigners and give them special supervision and help; and by encouraging the further training of school teachers and firm-based trainers and supervisors in the special needs of young foreigners.

However, it should be noted that the entire set of activities is mainly carried out by teachers from the regular school system and not by business/industry personnel. (European Community Action Programme 1984, 18-21)

4. Individual firms contribute to the work of the schools by supplying instructional materials concerning their areas of economic activity. Thus, for example, Deutsche Bank has devised two instructional units in economics, and Edeka-Zentrale an instructional unit on consumer education. The savings banks provide a wide assortment of instructional material on finance, as does Shell on energy, the German Margarine Institute on home economics, Philips, and Coca Cola. Demag-Konzern goes somewhat further by sending its top management into the upper grades of the Gymnasium to give instruction in economics (the so-called "Duisberg Model").

5. In common with the schools, business/industry has come under increasing pressure to involve itself with disadvantaged groups, immigrant youth, women, unemployed youth, etc. German industry has provided special vocational programs for dropouts, low achievers, and the handicapped, and claims that in doing this it serves those whom the public school system has failed (Goebel et al. 1984, 18; Schlaffke and Zedler 1980). In 1978, for example, the Federal Institute for Vocational Education sought sponsors for model programs to increase the number of girls taking technical training. The Audi automobile company, among others, made available training places for girls in such traditionally male occupations as metal-turning and tool-making. The instructors, who had never before worked with female trainees, took special courses to prepare themselves for the physical and psychological problems anticipated. The program was subsequently extended to all technical specialties on the factory floor, and the numbers, though small, continue to expand. (Kuratorium der deutschen Wirtschaft fuer Berufsbildung 1985, 31-35)

6. Within the dual system, a recent development has been the establishment of so-called "integrated training systems," in which a number of smaller or highly specialized firms combine their resources. Young trainees move on a systematic basis from one firm to another, acquiring different types of specialized knowledge and skills. ("New training place record by industry," 1985, 19)

Conclusions.

The long-standing and highly regulated participation of business/industry in training is an outstanding feature of the German system. It is characterized by clear definition of roles and responsibilities by the national government, specification of training content and standards by federal agencies (with business/industry participation), provision by employers, and supervision, evaluation, and enforcement of regulations by regional and local employer-and-worker boards. The system reaches the majority of youth and enjoys high status. It exemplifies the adaptation of a traditional apprenticeship system to the requirements of a contemporary economy.

However, this intensive involvement of business/industry in work-related training is not matched with respect to school-based education and training, though a few isolated examples of firms' involvement can be identified. In any event, the contrast between the elaborate organization of the dual system and the reliance upon individual and local initiatives with respect to the secondary schools is marked.

IV. COMPARATIVE DISCUSSION AND FINDINGS

Business/industry involvement with the schools is a two-way street. It requires schools to reach out to employers and the workplace, and employers to involve themselves with the school system. As a result, joint programs, partnerships, and twinning arrangements have been established, requiring formal and informal provisions at local, regional, and national levels to take care of legal, financial and administrative details.

While collaboration between business/industry and the schools is widely supported rhetorically, it has not proved to be easy to install and maintain in practice. By tradition, business/industry has been excluded from direct participation in general education in the secondary schools, and the schools continue to maintain a certain degree of defensiveness against what they view as "outside interference" in their work. At the same time, business/industry continues to feel that it has a special expertise and interest in vocational training, and should be its main provider.

This exclusion of business/industry from general education has been modified somewhat in recent years, as schools have recognized that they need to improve collaboration with the world of work. It is increasingly conceded that educators need to become better informed about employers' wishes; that, as education becomes more costly, it can profit from the material and political support the business sector can provide; and that the schools need access to the workplace in order to bring a greater degree of realism and sense of immediacy to their curricula. Also, as the general education component in vocational education curricula has grown, the distinction between general and vocational education has become less well defined. Finally, as secondary schooling has become less exclusively a preparation for university entrance, its significance for the economic welfare of the nation has been enhanced, and business/industry's role as a "social partner" in the definition of secondary schooling has become more legitimized.

Three models.

The three countries present three different models of providing transition from school to work, with consequent differences in the way business/industry participates in education. In the first model, broadly represented by France, most of the preparation of young people for work takes place within the school system, under the control of the Ministry of Education. In the second, represented by Germany, the responsibility is divided between the school system and employers in a "dual system", in which most of the training is provided by employers in the workplace. Britain exemplifies a mixed model, with neither schools nor employers having a monopoly over any part of transition provisions (Furth January 1985, 7-11). In Germany, the roles and responsibilities of business/industry have been specified in great detail within a well-established and on the whole well-regarded system; in France, they are in the process of being

established; in Britain, however, adaptation and ad hoc local arrangements are the rule, though recent years have seen important legislation and the development of new government and business/industry agencies to advance and direct changes.

The three countries differ, too, in the extent to which young people of school age participate in general and vocational education (CEDEFOP 1983, 3), and in the extent of school attendance as compared with apprenticeships (OECD 1984: 1, 44). The following figures are for the 16-17 year old age group in 1981.

	School	Apprenticeship	Ratio	% of youth involved
U.K.	30	9	3/1	39
France	60	11	6/1	71
Germany	39	52	4/5	91

These percentages make clear the extent to which entry workers in France are more "schooled" than is the norm either in Germany, or in Britain (Lutz 1981, 76-77), and they document the extent of German business/industry responsibility for preparing young people for entry into work. Only in Britain does the majority of school leavers still enter the employment market without any formal transition, whether in school or in firms, and without any form of credential, despite increasing retention by the schools and the growth of the Youth Training Scheme.

Transition education.

Recent years have witnessed a progressive blurring of what were formerly quite sharp distinctions in France and Britain between the institutions constituting the school system, and those of the world of work. A new set of arrangements for the transition of young people from school to work is emerging in all three countries, though at different rates. Because these new transition institutions and programs are attracting an increasing number of young people, they constitute a severe challenge to the traditional arrangements for both schooling and apprenticeship. The pressures for change not only engender new forms of practice but also create tensions and adaptations of traditional modes of operation in several areas: governmental roles, legislative and regulatory action, financing, and the distribution of power and authority between national and local centers.

Each nation is dealing with these tensions and pressures for change in its own way, depending on its institutions and precedents, and current economic and demographic conditions. But in all three nations, the new conditions of transition have brought with them additional pressures for business/industry to become involved, and an increased willingness on the part of business/industry to do so.

Tensions and pressures.

In Britain, as the jurisdictional boundaries between the educational authorities' schools and the employers' training arrangements have blurred, uncertainties about the eventual limits of change have grown. This is evidenced in fears that current plans of the politically and financially well-supported Manpower Services Commission to extend the Youth Training Scheme from a one- to two-year program of employment, education, and training will undercut the Department of Education and Science, which is also trying to make school curricula more relevant to employment and more attractive to young people. The British worry especially about what they see as an undue vocationalization of the school curriculum. In France, too, the government is concerned that new transition programs might empty the LEPs and, as it is committed to maintaining a variety of educational and training arrangements (traditional lycées, LEPs, apprenticeships, and apprenticeship centers), it has tried to move forward on a broad front, first providing financial and political support to the LEPs, then to apprenticeship arrangements, then to the traditional lycées, all the while encouraging extension of business/industry involvement in schooling.

Germany's long-standing practice of having employers participate in the transition of youngsters from school to work, via the offer and operation of formal apprenticeships, has meant that Germany has not had so far to go as the other two countries in expanding the involvement of employers. Consequently, Germany has not experienced the wrenching adjustments that the introduction of new transition arrangements has brought about in England, and even to some extent in France.

Indeed, in Germany, if there has been change in the demarcation of responsibilities for transition education, it has been in a direction opposite from that of Britain and France. The tendency in Germany, especially under Social Democratic governments, had been to strengthen the school-based modes of training while faulting the traditional apprenticeship arrangements on at least three grounds. Specifically, the dual system has been charged with being overly and narrowly craft-based, and for that reason unresponsive to the needs of modern technologically-advanced industry; crudely exploitative of the cheap labor of young apprentices, in the interest of higher profits; and inherently incapable of meeting the quantitative demand for training places. However, attacks on the dual system along these lines have not gone unanswered (Lutz 1981, 85), and the return to power of a Christian Democratic government at the Federal level has encouraged business/industry organizations to become more active than ever in support of a continued, and even expanded, role for employers in both defining the content of education and in providing young people with opportunities for transition to work.

In France there has been a fairly clear and highly developed school-based system for equipping young people with academic and vocational knowledge; and, in Germany the dual system also has been very clearly defined across all the Laender. Because of the absence of a uniform, central direction of their system of schooling and transition, the British may well

have experienced unusual tension and difficulty in the process of adjusting the connections among schooling, training, and work. The British had left school matters largely in the hands of local authorities, and training matters in the hands of professional and industrial organizations. The result has been a hodge-podge of ad hoc arrangements, satisfactory-to-excellent in some areas (for example, advanced skill training of a relatively few young people), but only fair-to-poor for the majority entering lower skilled employment.

As concerns the impact of changes in transition education on administrative arrangements for providing education and training to young persons, Germany had a relatively easy task, given its long tradition of business/industry involvement. Britain, on the other hand, has had to create new mechanisms for incorporating business/industry organizations in educational planning and practice. In a somewhat startling paradox, the poor economic record of Britain in the past decade has led a Conservative government, inclined toward a laissez-faire rhetoric on most social and economic matters, to adopt an interventionist tone in educational policy, with the goal of providing radically altered transition arrangements for young people into work. Alongside an official policy of encouraging collaboration between firms and education authorities at the local level, the central government's Manpower Services Commission has become the chosen instrument for defining and executing education and training policy. The justification for this accretion of responsibility on a national scale has been largely in terms of the MSC's (alleged) keener appreciation of the skill requirements of the British economy as a whole, and of business/industry in particular.

While the British have been moving quite rapidly away from their traditional mode of decentralization, in France more responsibility for both the organization and funding of programs of transition education has been recently assigned to the localities, perhaps as a reaction to the traditional practice of initiative and control from the center. (Jallade 1985, 178-9)

Financing.

It is not possible to provide estimates of the money value of the resources provided by business/industry to the schools. The firms do not generally keep separate accounts of outlays, and in many cases the assistance is given in kind, rather than in cash. Business/industry involvement with the schools is entirely voluntary, and government incentives to become involved are diverse and indirect. However, as far as training programs are concerned, there are substantial differences among the countries in modes of financing, and in the ultimate burden of costs.

In Germany, employers and apprentices bear the entire cost of within-firm training and education; the costs of release time vocational school are borne by the Laender. Attempts were made in the 1970's to introduce a payroll training tax-plus-subsidy program, in order to impose some penalty on firms that avoid their training "obligations" and to reward those who do offer training. But these attempts failed on constitutional

grounds. German employers presumably recoup part of their training costs from the relatively inexpensive labor of apprentices. It has been estimated that 40 per cent of total training costs are covered from the sale of apprentices' output. (Nettokosten der betrieblichen Berufsbildung, cited in National Economic Development Council 1984, 17)

The British have adopted an opposite mode of financing, offering employers sizeable public subsidies for in-firm job placement and training. As one observer has put it: "...the New Training Initiative of 1981 has effectively buried the long-standing principle that the financing of industrial training is the responsibility of employers." (Ryan 1984, 31). Youth wage-rates in Britain tend to be set quite high (about 60 per cent compared to adult workers' rates), and the differential has been shrinking, so that employers' reluctance to offer jobs and training without substantial subsidy is understandable.

As already noted, the French rely on the payroll training tax-plus-subsidy device (something that the British had fairly extensively adopted as part of the Industrial Training Board program). This lessens the direct impact of training costs on general tax funds. However, the payroll training tax presumably erodes the French company tax base to some degree, curtailing the flow of general tax revenues to Paris; and the French government spends heavily for the support of pre-service training of secondary school youth in publicly-funded collèges and lycées. Given these considerations, not only the British, but also the French systems of financing training can be regarded as relying heavily on public funding, especially compared with the German approach.

The state of the economy.

Apart from adjustments in the traditional machinery of government and the financial arrangements governing firms' training efforts, economic conditions are likely to be a crucial factor shaping the nature and extent of business/industry participation in education and training. All three countries have experienced economic recession -- France and Britain quite severely, and Germany noticeably, but more moderately.

The effect of economic downturn on business/industry efforts in education and training is likely to be somewhat ambiguous. Faced with a relatively abundant labor supply, firms will tend to curtail training, because they do not need to offer training opportunities as an additional recruitment incentive. They also have an incentive to call for more vocational training in the schools, in order to shift training costs to the public purse. But, working in the opposite direction, a slacker labor market implies less labor mobility. This means that firms do not have to fear quite as much the loss of newly-trained labor to competitors, thus giving them some incentive to maintain their training efforts.

In contrast to these ambiguities, government policies in all three countries have been strongly directed at promoting more business/industry involvement in education and training. This seems to have been prompted by two considerations. First, governments in Britain and France have now

accepted the responsibility (long recognized in Germany) for providing a systematic, national approach to preparing young people for entry into work. Second, each nation views itself as being in severe economic competition with other industrialized and trading nations, and believes that success in that competition will depend importantly on the skills and adaptability of the labor force. Both considerations have argued strongly in favor of an enhanced role for business/industry in education and training. Thus, Britain, with the poorest economic record of the three, has witnessed the most change in government activity aimed at increasing such involvement; Germany, with the best economic and employment record (and also the most business/industry involvement already) has seen the least. France lies somewhere between these two extremes.

International Pilot Projects.

Special note should be taken of pilot programs mounted by the European Community in its member nations (including the three countries which are the focus of this study). The first phase of the program, the "Transition of Young People from Education to Working Life," began in 1976, prompted by a widespread concern about rising youth unemployment. The second, projected as a three-year phase, began in 1983 and is similarly concerned with the development of better education and preparation for working life. It is based on a resolution of the European Council, in which Ministers of Education of the ten member nations called for action to assist the States to develop their policies for young people aged 14-18. The current program consists of thirty pilot projects, each concerned with trying out new solutions to the youth transition problems facing all of the Community's nations. (European Community Action Programme 1984) Whereas the projects in the first program were mainly concerned with encouraging change within schools, the second set is more concerned with the relationship between schools and other local agencies: industry, businesses, and public and private youth services. The aim is to help those agencies become aware of the part they can and must play in the transition of young people to adult and working life, and to improve their ability to collaborate successfully with the schools. The majority of the pilot projects (some of which have been cited in the Examples given in Chapter III) are concerned with setting up work experience opportunities for students as part of compulsory education, and developing better guidance and counselling. The central objective is to bridge the gap between school and the outside world; and a key concept is "partnership," engaging the interest, understanding, and cooperation of people and organizations in schools and work, public and private.

Conditions for Effective Business/Industry Involvement.

The experience of several nations has shed a good deal of light on the conditions necessary for successful cooperation between business/industry and the schools.

A European Community report on developing a new curriculum in transition programs for the 14-18 year age group, stresses a number of key factors for success, covering the context, the content, and the methods of

instruction used. The report argues that consideration needs to be given to the physical setting where programs are offered and their suitability to both the nature of the instruction given and the nature of the 'target group' (the students). The social context is, however, equally important, that is, the nature of the inter-personal relationships among staff and learners respectively, and the relationship between them. Finally, success in conveying any particular content depends as much on the methods as on the appropriateness of the content. The implications for success in developing a work experience program are thus considerable, covering changed attitudes and new skills in staff, new methods of assessment, possible new formal regulations, and changes in the formal and informal ways of providing various types of resources (European Community Action Programme 1984, 9-17). A number of specific examples illustrate the difficulties involved:

> ...when staff are recruited from industry and commerce it is essential that they fully understand that successful production is not the major aim. The aim is the development of the young people, and this involves an acceptance, on their part, of student participation. The staff have to realize that, within the limits of acceptable risk, wrong decisions are themselves a learning situation.(Ibid., 48)

The following caveat is also instructive. In reference to the content of instruction,

> A tendency exists to presume that because the working situation...is 'real', young people will automatically acquire all the knowledge they need of the adult world. This is not true. (Ibid., 49)

Assessment of work experience programs in the British Schools Council Industry Project has thrown light on other conditions likely to influence successful collaborations between business/industry and the schools. Such programs are more likely to be successful if decentralized to school departments and not run from 'the centre' by LEAs (Jamieson and Lightfoot 1982, 144). Guidelines for projects and assessments after the fact all emphasize the need for proper planning and management: equal and full involvement of all parties concerned, after lengthy orientation and opportunity for learning about the priorities of each participant and the conditions under which they operate; clear identification of respective responsibilities and accountability for performance and outcomes. Working relationships in the schools (between teachers, the head, and the LEA) are different from those in a firm (between, for example, a manager, his managing director, and the shareholders) (Department of Education 1981, 14). Failure to appreciate these differences leads to problems in implementing even an agreed-upon program. The new partners, whether teachers, or workers and supervisors from business/industry, require preparation to perform in the new milieu.

Findings and Conclusion.

The major findings of the present study may be summarized as follows:

o Employers in all three nations make similar criticisms of the schools. These include: lack of connection of school curricula with the world of work, the schools' preoccupation with academic study and credentials, inadequacy of basic skill training, and the consequent unpreparedness of school leavers for work.

o Their recommendations for change, aimed at repairing these deficiencies, are also very similar. They want a more "practical" curriculum, greater knowledge and appreciation of the world of work on the part of both teachers and students, and more efficient management of the schools.

o Business/industry participation is organized in substantially different ways in each of the three countries, though specific types of activities tend to be repeated.

o. The three nations represent three different models of transition education and training: school-based (France), firm-based (Germany), and a mixed model (England).

o There is considerable variation in the extent to which business/industry is involved in secondary transition education, from extensive (in Germany) to relatively low (France).

o In Germany, there has been little change over the last few years in either the extent or the structure of business/industry involvement in education and training. This is in sharp contrast to both France and Britain (the latter, particularly), where the trend of government policies has made remarkable shifts. These shifts have, in turn, produced substantial tension between the traditional authorities governing education and the newly created ones.

o In Germany, employers bear a large proportion of the costs of training, recouping much of this by utilizing the relatively cheap labor of apprentices; in Britain, the wage costs of trainees are rather high for employers, and government tries to reduce these by offering employment and training subsidies. In France, too, the combination of a secondary school-based vocational and technical training and a payroll training tax implies that a large fraction of total education and training costs are covered either directly or indirectly by public funds.

o There is no evidence from these three cases that any particular mode of financing (by State, employer, or trainee) or administration (local or central) is to be preferred as a way of involving business/industry, though presumably the greater the reliance on public funding, the greater the risk that changes in government budget priorities will adversely affect business/industry involvement in the future.

o Business/industry continues to have an important if not dominant role

in vocational training. In spite of the sizeable increase in business/industry interest in secondary education, the base from which it began was extremely small, and its involvement, therefore, remains limited and sporadic, especially as regards the general education system.

o If business/industry involvement in general education is to be successful, and even expand, careful attention has to be given to establishing the conditions and appropriate institutional arrangements for collaboration between business/industry and the schools. Some progress toward this in France and Britain is noted; in Germany the dual system has for long provided these conditions for vocational and technical training, though relatively little has been done to expand collaboration with respect to general education.

In Britain, business/industry involvement with education is shaped primarily by the national voluntary organizations of business and local initiative, nowadays with substantial governmental encouragement. The result has been an assortment of ad hoc arrangements, hardly amounting to a system of transition education and business/industry involvement in general education, though there is a good deal of agreement that it is precisely a system that is needed. In France, government encouragement (and rhetoric) for business/industry to get involved is also quite strong, but the major locus of change remains the schools, with relatively little willingness to accord business/industry more than a supplementary specialized role in preparing young people for work. In Germany, not only is there little substantial change to be seen in the traditional ways of involving business/industry with the education and training of youth, but even the governmental rhetoric is muted. By and large, Germany is satisfied not only that it has come a long way in involving business/industry in the preparation of young people for work (certainly much further than all of the European countries, other than perhaps Austria and Switzerland), but that the nation has already encompassed the changes that both the British and the French are seeking to make. Under the circumstances, it is not surprising that both Britain and France look to Germany as a model of transition to work in which they find much to admire. However, a common set of challenges has produced noticeably different responses in each country, and it is likely that each nation's institutions will continue to respond in its own characteristic way.

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